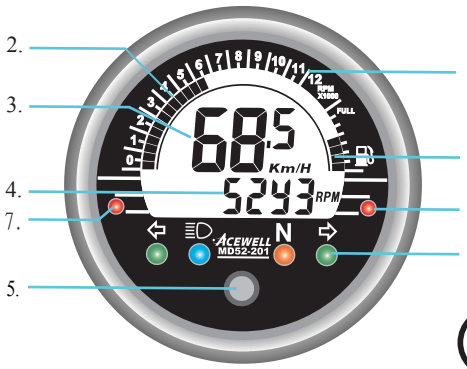
ACEWELL®

Motorcycle/Scooter Computer
MD-052-2XX/3XX User Manual



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Thanks for purchasing the Motorcycle/Scooter computer.

The user manual is designed for MD-052-2XX and MD-052-3XX series, functions and descriptions with " ** " are for MD-052-2XX only, functions and descriptions with " * " are for MD-052-3XX only.

Different LED combinations have different model numbers. You may find the above photo has different LED indicators from your computer; the photo above is for reference only.

PANEL DESCRIPTIONS

1. Tachometer Scale
2. Bar Tachometer
3. Speed & MAX speed
4. Other functions display
5. Push Button
6. ** Fuel bar or *Thermo meter
7. Shift warning indicator
8. Indicator of ** low fuel or *over temperature
9. LED indicators

⇦	Left direction indicator/Green		Engine oil / Red
≡D	Main-beam headlamp/Blue	N	Neutral Gear /Green
⇨	Right direction indicator/Green	R	Reverse Gear /Red
⚠	Hazard Warning/ Red	D	Drive Gear /Green
P	Parking/Green		Engine coolant temperature/ Red
⇦⇨	Direction indicator/Green		Rear fog lamp/Amber
⇦1⇨	Flash Trailer/Green		Engine in out of use/ Red

FEATURES

- Multi-functional LCD Motorcycle/Scooter computer displays speedometer, bar-graphic tachometer, ** fuel gauge or * temperature gauge, and one of other function simultaneously.
- Integrates backlight and 6 LED lights for different purpose indicators.
- Built-in bar-graphic and digital tachometers and resettable shift warning indicator.
- On some models the backlight can be controlled separately from the ignition power.
- Allows end user to adjust odometer when the odometer is less than 30km / 18.6 miles
- Fast processor so can connect to pulse type gearbox speed sensors.
- **Fuel gauge includes +/-100Ω, 250Ω and 510 Ω options for fuel meter input resistance, as well as "fuel gauge off" mode.
- *MD-052-3XX series includes a temperature sensor for temperature gauge.
- Odometer and total riding timer are stored in memory, even when the power is off.
- Universal wheel circumference setting from 1mm to 3999mm.
- Includes speed sensor, magnet, RPM sensing wire, fitting kit, wiring harness and *temperature sensor.
- Excellent water resistant, anti-vibration structure and noise immunity design.

SPECIFICATIONS

Functions	Symbol	Specifications	MD52-2XX	MD52-3XX
Bar tachometer		12,000 rpm,	●	●
Digital Tachometer	RPM	100-19,900 rpm, 100rpm increment	●	●
Max. RPM	MAX RPM	100-19,900 rpm, 100rpm increment	●	●
Speedometer	Km/h / MPH	2.4-300.0 km/h (187.5MPH)	●	●
Trip Meter	TRIP	0.0-999.9 KM/Miles	●	●
Odometer	ODO	0 - 999999 KM, 0-624999 Miles	●	●
Maximum Speed	MAX	2.4-300.0 KM/h (187.5 MPH),	●	●
Average Speed	AVG	2.4-300.0 KM/h (187.5 MPH),	●	●
12/24 Hour Clock		0:00'00" – 11H59'59"/23H59'59"	●	●
Total Hour Meter	HRTT	0-9999H59'	●	●
Riding Timer	RT	0-99H59`59``	●	●
Total Riding Timer	TT	0-9999H59',	●	●
**Bar-Fuel meter		1-7 bars, +/-100, 250, 510Ω and off mode.	●	
Volt meter	V	8-18VDC	●	●
*Temperature meter	°C or °F	0 °C-180 °C / 32 °F-356 °F		●
*MAX Temperature	MAX °C or °F	0 °C-180 °C / 32 °F-356 °F		●
*Bar Temperature meter		1-7 bars and Off mode.		●

Power Input	DC 8-18V
Speed Sensor	Reed or 2 wires Hall-effect Sensor
Tachometer input	CDI or Ignition Coil Signal
Wheel circumference setting	1mm-3999mm (1mm increment)
* Temperature sensor	PT1/8" thermistor sensor
Dimensions	Ø52*45.1mm
Operation Temperature:	-20°C - +80°C (inner temperature)
Storage Temperature:	-30°C - +85°C (Inner temperature)

FUNCTIONS

: Bar Graphic Tachometer

1. The bar graphic tachometer is always displayed.
2. It displays bar graphic tachometer up to 12,000RPM.

RPM: Digital Tachometer

1. It displays digital tachometer up to 19,900RPM and displays 19,999rpm when tachometer is over 20,000rpm.
2. Tachometer signal can pick up from either CDI or Sparking plug we suggest to circle round 2-5 turns on CDI or Plug cable.
3. It has 2 wires to pick up RPM signal, the yellow wire is to connect to Plug, and blue wire is for signal from ECU or Ignition coil, only use 1 of the wires.

Shift Warning RPM

1. The function enables you to set up a shift warning RPM.
2. Bar-graphic tachometer flashes when RPM reaches setting value, and stop flash after you shift gear.

MAX RPM: Maximum Tachometer

1. MAX RPM is displayed at the 2nd row.
2. Displays highest tachometer achieved after last Reset operation.

SPD: Speed Meter

1. Speed meter display is at the 1st row of the screen
2. Displays speed meter up to 300.0 Km/H or 187.5 mph.

MAX Km/h or MPH: Maximum Speed Meter

1. MAX is displayed at the 1st row.
2. Displays highest speed achieved after last Reset operation.

AVG: Average Speed Meter

1. AVG is displayed at the 1st row.
2. It calculates average speed from last RESET. The AVG is calculated from TRIP be divided by RT.

TRIP: Trip Meter

1. TRIP function accumulates trip distance from last RESET as long as bike is being ridden.
2. Display is on the 2nd row of screen.

ODO: Odometer

1. ODO accumulates total distance traveled.
2. ODO data is adjustable when it is less than 30km (18.6 Miles), after that it stored in memory and cannot be reset.

HRTT: Total Hour Meter

1. Calculates total engine operation time since installation.
2. Counting automatically begins with engine starting.
3. HRT data is stored in memory, and cannot be reset.

RT: Riding Timer

1. Calculates total operation time since last RESET operation.
2. Counting automatically begins with movement.

TT: Total Riding Timer

1. Calculates total operation time since installation.
2. Counting automatically begins with movement.
3. TT data is stored in memory, even when the power is off.

: 12/24 hour Clock

1.Displays 12 or 24hour current time.

****: Fuel Meter (Only for MD-052-2XX series)**

1. Has 7 bars to indicate how much fuel remains.
2. Built-in 100, 250, 510Ohm, oFF, -100, -250 and -510Ωfuel sender resistance, the fuel bars will disappear when you select "oFF" mode.
3. The full bars are low resistance and empty bar is high resistance for 100, 250 and 510ohm; -100, -250 and -510 ohm are the inverse.
4. Last bar and LED flash to indicate low fuel level

Fuel Bar	100Ω	250Ω	510Ω	-100Ω	-250Ω	-510Ω
7	0~10	0~25	0~50	100~90	250~230	510~460
6	11~20	26~50	51~100	89~75	229~200	459~380
5	21~35	51~85	101~180	74~60	199~150	379~300
4	36~45	86~110	181~230	59~45	149~110	299~230
3	46~60	111~150	231~300	44~35	109~85	229~180
2	61~75	151~200	301~380	34~20	84~50	179~100
1	76~90	201~230	381~460	19~10	49~25	99~50
0-Flash	91~100	231~250	461~510	9~0	24~0	49~0

*** ˚C or ˚F: Temperature Meter**

1. It measures and displays from 0℃ to 180℃ (32℉-356℉).
2. It displays -L-℃ or -L-℉ when temperature is lower than 0℃ or disconnected temperature sensor, and displays -H-℃ or –H-℉ when temperature is over 180℃ or 356℉.
3. The bar-temperature and digits of temperature and temperature LED indicator flash when the thermo sensor detects temperature higher than the maximum preset temperature.
4. The 4th bar of the temp bar chart counting from the bottom turns on when temperature reaches the preset warning temperature, each +/-15 ℃ lights on/off a bar based on the 4th bar.

Speed decimal option:

1.User can decide to display speed to 1 or 0.1 mph / km/h.
2.Follow the item 10 of set up mode to option the decimal of speedometer.

V: Digital Voltage Gauge

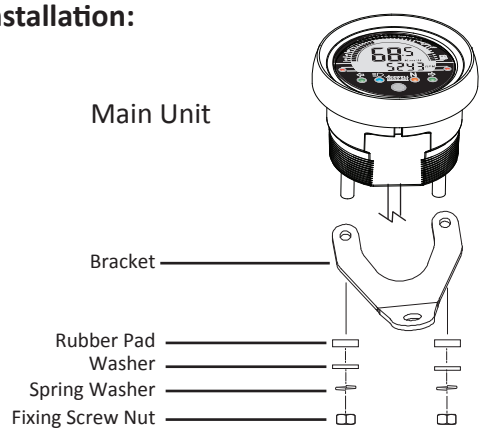
It checks bike's battery and charging systems health and displays battery / charging voltage.

***MAX ˚C or ˚F: Maximum Temperature**

1. It displays at the 1st row of LCD.
2. Displays highest temperature achieved since last Reset operation.

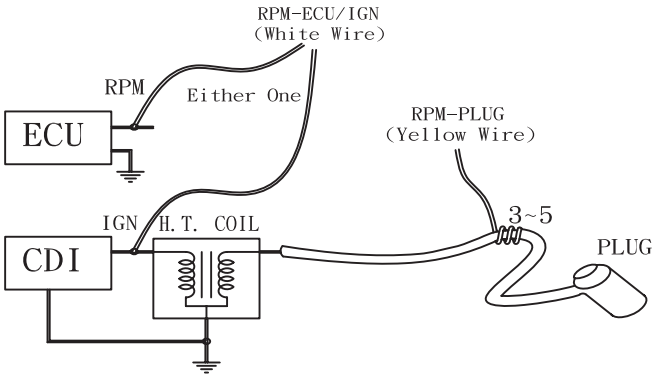
INSTALLATION & PARTS

Main Unit Installation:



RPM sensor mounting: RPM Input,

1.Connect either the yellow or white wire to sense the RPM signal.
2.The yellow wire can be wrapped around the spark plug lead.
  a.Signal intensity from ignition coil is dependent on vehicle type.
  b.Coil 2-5 turns around spark plug lead, with more turns creating steadily stronger signal, fewer turns creating weaker signal.
3.If the yellow wire be wrapped around the spark plug lead works not stable, please try to connect the white wire to either the ECU rev counter output or to the primary side of the coil.

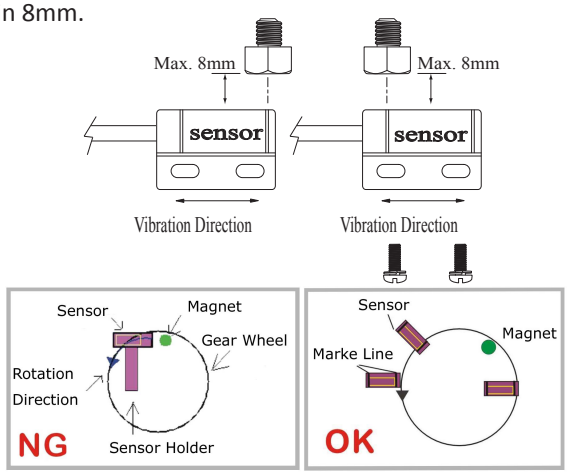


Speed Sensor Mounting:

ACEWELL has several speed sensors; the unit may include one of them. If the model is intended to be connected to a gearbox electronic speed output to obtain the speed reading, no speed sensor will be included

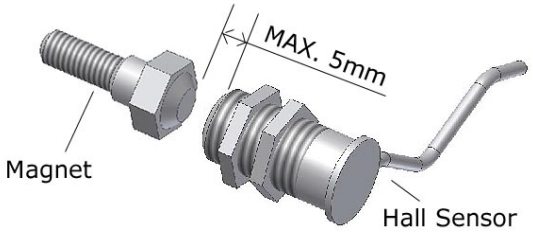
Reed Speed Sensor and Magnet:

1. This sensor is universal sensor for motorcycle, find a rotating part to install magnet (for example disk, sprocket or driveshaft) and a location to install the sensor where it can be aligned to the magnet.
2. Align the center of the magnet to either of the sensor marking lines or the end of the sensor. The magnet must not travel down the body of the sensor
3. Installing the sensor parallel to the vibration direction creates optional anti-vibration effect.
4. Make sure the gap between the magnet and the sensor is within 8mm.



Hall Effective Speed Sensor and Magnet:

1. This is universal sensor for ATV or motorcycle front or rear wheel installation. For some fitments an accessory speed sensor holder may need to be purchased.
2. Find a rotating part to install magnet (for example disk, sprocket or driveshaft) and a location to install the sensor where it can be aligned to the magnet
3. Align the center of the magnet to center of side face of the sensor.
4. Make sure the gap between the magnet and the sensor is within 5mm.



Specific Hall sensors:

Cable drive adaptors for most bikes originally fitted with cable driven speedometers or odometers are available. When using these cables it is necessary to divide the circumference setting by the number of rotations of the cable per rotation of the wheel.

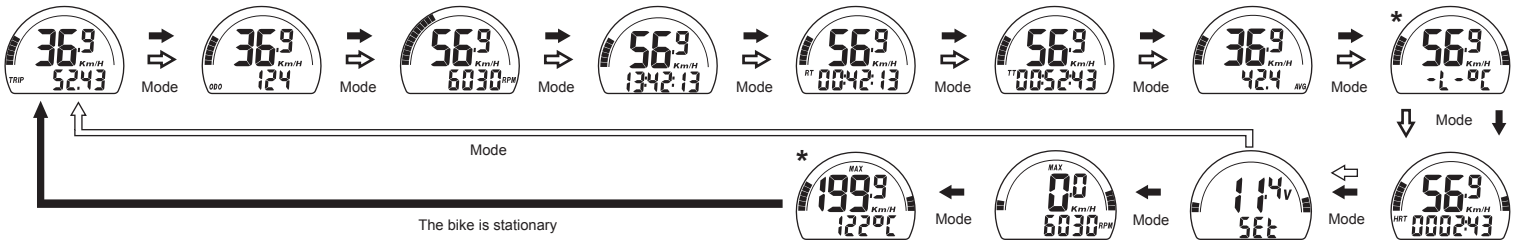
***Thermo Sensor and Sensor Tube:**

1. The unit includes a water temperature sensor; you may have to purchase a suitable water pipe temperature sensor tube to install the sensor on some bikes.
2. Cut the water pipe, insert the temperature tube into the pipe and secure it by attached pipe clamps.
3. Screw the sensor into the tube.
4. If your vehicle is fitted with a thermostat that stops water flowing to the radiator when the engine is cold, you will not get a reading until the thermostat opens.
5. Custom sensors are available for carbureted bikes to replace the original sensor.

BUTTON OPERATIONS

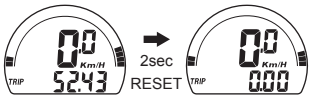
Push Button: Change mode

1. Briefly push the button to move in loop sequence from one function screen to another.
2. Push the button to move between all functions in sequence as "➡" from one function screen to another when the bike is stationary.
3. Push the button to move partial functions in loop sequence as "⇨"when speed sensor detects signal input.



Press and hold Button for 2 sec.: Reset operation

1. Press and hold the button for 2 seconds to reset data at the screen.
2. Press the button to reach the desired screen then press and hold the button for 2 seconds to reset TRIP, RT, MAX, AVG and MAX RPM data from stored values to zero.
3. ODO, HRT and TT data cannot be reset.



Get to SETUP mode:

1. Push the button until the V & Set screen appears when the bike is stationary
2. Press and hold the button for 2 seconds to go into the set mode.
3. Follow the set up instruction to set up data.

Shift Warning RPM Operation:

1. Press the button to reach the RPM screen; pull on the throttle until the desired shift warning RPM.
2. Press and hold the button for 2 seconds to confirm and set up the shift warning RPM.
3. Warning LED will flash to remind you shift gear.
4. Press and hold the button for 2 seconds to re-setup another value of shift warning at the RPM screen.

Clock, RPM,SPC, Wheel, Pulse, Units, *TEMP, **fuel & ODO SET UP

1. Setup operations include 12H/24H clock, shift warning RPM, engine signal, wheel circumference, speed pulses, units, temperature units, warning temperature, fuel sender resistance selection and odometer adjustment. You have to set up step by step. The computer will be automatically revert to main screen if no button operation for 75 seconds in any setting screen.
2. Push the button to reach the "xx.xV and Set" screen, then hold the button for 2 seconds to go into the setting mode. In setting mode, each press of the button increments the flashing digit by 1 or converts units. Hold the button for 2 seconds to confirm the digit setting and jump to next setting screen or digit, until the last setting mode then go to normal mode.
3. It displays "12 or 24H and XX:XX:XX " symbols and AM/PM when you select 12H. Operate button as described in item 2 to finish clock setting and jump to shift RPM warning setting.
4. It displays the default "r06500 RPM", the digits "06" flashes. Follow the item 2 of button operation to finish the shift RPM warning setting and jump to engine specification setting.
5. It displays "SP 1r1P and RPM", the default value is 1r1P; there are 5 options: 1r1p, 2r1p, 1r2p, 1r3p, 1r4p. "r" means the numbers of engine rotation, "P" means number of signals from engine. For example the value 2r1P means the engine rotates 2 turns to output one signal.
6. Press the button to move in loop sequence from one to another value of the 5 values. Hold the button to confirm the setting and go to wheel circumference setting screen
7. It displays "cXXXX", "c" means "Circumference", following 4 default digits; flashing digit is digit to be set. Follow the item 2 of button operation to finish the wheel circumference setting and jump to speed pulses setting.
8. It displays "P-001", the pulses screen, the number of pulses into the computer per turn of the wheel. Follow item 2 of button operation to finish the setting and jump to unit setting.
9. It displays Km/H or MPH, each press of the button converts unit; hold the button for 2 seconds to confirm unit setting and jump to temperature unit setting.
10. It displays "100.0Km/H & on" or "100Km/H & oFF", the decimal point will disappear when Off is selected. Follow the item 2 of button operation to finish the decimal setting and jump to temperature units setting.
11. * It displays "°C, °F or oFF", each press of the button converts °C, °F or Off, the temperature bars will disappear when you select oFF mode; hold the button for 2 seconds to confirm temperature unit setting and jump to temperature warning setting.
12. * It displays "XXX°" and the selected unit. Follow the item 2 of button operation to finish the temperature warning setting and go to fuel sender resistance setting.
13. ** It displays "100r", follow the item 2 to select 100Ω, 250Ω, 510Ω, oFF, -100Ω, -250Ω or -510Ω and jump to odometer setting.. The fuel meter bar will disappear if you select oFF mode.
14. It displays "ODO & 00000X Km/H or MPH", the "X" is from odometer testing in factory, follow item 2 to set a desired odometer value and return to Normal Mode. This setting screen will disappear when the odometer is over 30km (18.6Miles) or your setting is over 30km